

Serial No. 09/695,951

Attorney Docket No. 97309.00045

REMARKS

Claims 1-3, 7, 12, 23, 27, 30, 31, 34, 37, 38, 48 and 49 have been amended, claims 6 and 15-20 have been previously canceled, and thus claims 1-5, 7-14 and 21-49 are pending in the application. Applicants note with appreciation that claims 12-14 are allowed. In view of the following remarks, it is respectfully submitted that claims 1-5, 7-11 and 21-49 are also allowable.

Claim Objections

Claims 2-5, 7-9, 12-14, 23-26, 29-33, 37-40, 48 and 49 are objected to for a number of informalities. Claims 2, 7, 12, 23, 30, 37, 48 and 49 are amended to address the objections. Applicants also respectfully submit that the description in line 5 of claim 48 is accurate. Applicants request reconsideration and withdrawal of these objections.

Claim Rejections – 35 U.S.C. § 102

Claims 1-3, 5, 27-31 and 34-38 stand rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 6,834,573 to Nakahara, hereinafter "Nakahara". Claims 1, 3, 27, 31, 34 and 38 are independent. Applicants respectfully traverse this rejection.

Nakahara describes a saw blade for cutting metal workpieces, and for creating curls from the metal chips produced during cutting. The saw blade includes teeth having small-diameter curl forming sections 11 provided to the points of each of saw teeth 3, 5 and 7, for slightly curling chips generated at the time of cutting a workpiece (col. 4, lines 62-65). Each small-diameter curl forming section 11 has a plane rake face 19 and a curved face 21 (col. 4, lines 66-67). Rake face 19 extends by a predetermined length B from the point 13 of the saw tooth 3, 5, or 7 toward a bottom portion 17 of a gullet section 15 of the saw blade 1 (col. 5, lines 1-4). Curved face 21 is provided along an arc of a radius R continuously to the rake face 19 (col. 5, lines 4-5). As shown in FIG. 3, the chips S being generated are curled into a small-diameter coil or spring shape at the small-diameter curl forming section 11 and are positioned in the gullet 15 of the saw blade 1 (col. 5, lines 53-56). Any tendency of the generated chips to flow sideways is low, and the chips are curled so as to remain in the gullet 15 (col. 5, lines 62-64).

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Nakahara describes the curved face of the curl forming section as sloping downward toward the gullet, as shown especially in FIGS. 1A and FIGS. 4A-4C. Nakahara also specifically states that chips generated by the curl forming section are to be positioned in the gullet. Thus, the curved face of the curl forming section must curve downwardly toward the gullet so as to coax the chip forward and downward into the gullet.

However, Nakahara is directed to forming **small diameter or spring shaped curls** from chips, which can be only created in this manner from **metal workpieces**. In contrast, the saw blade of claim 1 is directed to a **wood cutting band saw blade that produces saw dust**. Nakahara is thus directed to cutting metal workpieces and improving the characteristics of the metal chips formed therefrom. Nakahara is not concerned in any way with cutting wood, much less with the problems associated with cutting wood and removing sawdust from the kerf when cutting wood. Accordingly, Nakahara does not teach or suggest a wood cutting band saw blade as recited in amended claims 1 and 3.

Furthermore, unlike the curl forming section of Nakahara, which curves downward toward the gullet and thus defines angles that are significantly less than 90°, the saw blade of claim 1 recites a shelf having at least a portion that is **oriented at an angle of at least about 90° relative to a back edge portion of the blade in a cutting direction of the blade**. As a result, the shelf of claim 1 forces saw dust away from the gullet. Nakahara teaches precisely the opposite of this, in that Nakahara specifically teaches disposing chips forward and into the gullet.

Thus, Nakahara does not teach or suggest a wood cutting band saw blade including a “plurality of teeth comprising a plurality of set teeth, each set tooth defining a tip, a bend plane, and a shelf located at least partially between the tip and the bend plane for reducing saw dust passing to the kerf and accumulating on the band saw blade, wherein at least a portion of the shelf is oriented at an angle of at least about 90° relative to a back edge portion of the blade in a cutting direction of the blade,” as recited in claim 1 as amended. Accordingly, claim 1 is not anticipated by Nakahara.

Furthermore, Nakahara does not teach or suggest **a ratio between (i) the distance between the tip and the curl forming portion and (ii) the distance between the tip and the bend plane of the tooth**, as recited in claim 3 as amended. The Office Action contends that FIG. 3 shows a ratio of “approximately 0.25”. However, FIG. 3 of Nakahara merely demonstrates that the curl forming section extends from the end of the tooth toward the base of

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the blade. Nakahara is silent with respect to any relationship between the distance between the tip and the curl forming portion and the distance between the tip and the bend plane.

In addition, it appears that the Examiner has estimated a ratio based on mere visual inspection of FIG. 3. As discussed in the M.P.E.P. in section 2125, patent drawings may not be relied on to show particular sizes if the specification is silent on the issue, but may be relied on for what they would reasonably teach one of ordinary skill in the art. For example, *In re Wright*, 569 F.2d 1124, 193 USPQ 332 (CCPA 1977), states: "We disagree with the Solicitor's conclusion, reached by a comparison of the relative dimensions of appellant's and *Bauer's* drawing figures, that *Bauer* 'clearly points to the use of a chime length of roughly 1/2 to 1 inch for a whiskey barrel.' This ignores the fact that *Bauer* does not disclose that his drawings are to scale. ... However, we agree with the Solicitor that *Bauer's* teaching that whiskey losses are influenced by the distance the liquor needs to 'traverse the pores of the wood' (albeit in reference to the thickness of the barrelhead)" would have suggested the desirability of an increased chime length to one of ordinary skill in the art bent on further reducing whiskey losses."

Nakahara does not provide any information regarding the distance between the tip of the tooth and the bend portion, and further does not provide any information regarding a ratio or other relationship between (i) the distance between the tip and the curl forming portion and (ii) the distance between the tip and the bend plane of the tooth. Furthermore, Nakahara does not give any indication that a ratio as described above would be beneficial or otherwise teach or suggest any reason for providing such a ratio. Thus, Applicants respectfully submit that, in the absence of any information regarding the ratio or teaching of any benefit to such a ratio, FIG. 3 of Nakamura is not sufficient to demonstrate a teaching of any defined ratio, especially the ratio as recited in claim 3.

Thus, Nakahara does not teach or suggest a wood cutting band saw blade including a plurality of set teeth, wherein "each of the set teeth has a dimension (SI) defined as the distance between the tip and the shelf of the respective tooth; each of the set teeth has a dimension (B) defined as the distance between the tip and the bend plane of the respective tooth; and a ratio of SI/B is within the range of approximately 1/4 to approximately 3/4," as recited in claim 3 as amended. Accordingly, claim 3 is not anticipated by Nakahara.

Claims 27 and 34 recite features similar to that of claim 1. Thus, for reasoning that is the same as or similar to that provided in support of the patentability of claim 1, claims 27 and 34 are not anticipated by Nakahara.

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Claims 31 and 38 recite features similar to that of claim 3. Thus, for reasoning that is the same as or similar to that provided in support of the patentability of claim 3, claims 31 and 38 are not anticipated by Nakahara.

Claims 2 and 5 depend from claim 1, claims 28-30 depend from claim 27, and claims 35-37 depend from claim 34. Thus, for reasoning that is the same as or similar to that provided in support of the patentability of claims 1, 27 and 34, claims 2, 5, 28-30 and 35-37 are not anticipated by Nakahara.

For the above reasons, it is respectfully submitted that the rejection of claims 1-3, 5, 27-31 and 34-38 under 35 U.S.C. § 102(b) as being anticipated by Nakahara is overcome. Applicants respectfully request reconsideration and withdrawal of the rejection of claims 1-3, 5, 27-31 and 34-38.

Claim Rejections – 35 U.S.C. §103

Claims 4, 7-11, 21, 22, 25 and 26 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Nakahara. Applicants respectfully traverse this rejection.

As discussed above, Nakahara does not teach or suggest a wood cutting band saw blade, wherein “at least a portion of the shelf is oriented at an angle of at least about 90° relative to a back edge portion of the blade in a cutting direction of the blade,” as recited in claim 1 as amended. Nakamura further does not teach or suggest a wood cutting band saw blade including a plurality of set teeth, wherein “each of the set teeth has a dimension (SI) defined as the distance between the tip and the shelf of the respective tooth; each of the set teeth has a dimension (B) defined as the distance between the tip and the bend plane of the respective tooth; and a ratio of SI/B is within the range of approximately 1/4 to approximately 3/4,” as recited in claim 3 as amended. Therefore, claims 1 and 3 are patentable over Nakahara.

Claims 4, 7 and 8 depend from claim 3, and claims 9-11, 21, 22, 25 and 26 depend from claim 1. Thus, for reasoning that is the same as or similar to that provided in support of the patentability of claims 1 and 3, claims 4, 7-11, 21, 22, 25 and 26 are patentable over Nakahara. Applicants respectfully request reconsideration and withdrawal of the rejection of claims 4, 7-11, 21, 22, 25 and 26.

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Claims 23, 24, 32, 33, 39 and 40 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Nakahara in view of Japanese Publication 6-716 to Nakahara, hereinafter "JP '716". Applicants respectfully traverse this rejection.

As discussed above, Nakahara does not teach or suggest a wood cutting band saw blade including a plurality of set teeth, wherein "each of the set teeth has a dimension (SI) defined as the distance between the tip and the shelf of the respective tooth; each of the set teeth has a dimension (B) defined as the distance between the tip and the bend plane of the respective tooth; and a ratio of SI/B is within the range of approximately 1/4 to approximately 3/4," as recited in claim 3 as amended.

JP '716 describes a metal cutting saw blade. Similarly to Nakahara, JP '716 is directed to forming curls from chips created from metal workpieces. The saw blade teeth of JP '716 include a straight-line part extending from a cutting point of the tooth to a chip induction surface that forms a recessed arcuate shape. Chips fed from the straight-line part are guided by the arcuate surface to effectively generate a curl. However, JP '716 does not describe or suggest a wood cutting band saw blade, or a ratio between (i) the distance between the tip and the curl forming portion and (ii) the distance between the tip of the bend plane of the tooth, as recited in claim 3 as amended.

Thus, Nakahara and JP '716, whether considered alone or in combination, do not teach or suggest a wood cutting band saw blade including a plurality of set teeth, wherein "each of the set teeth has a dimension (SI) defined as the distance between the tip and the shelf of the respective tooth; each of the set teeth has a dimension (B) defined as the distance between the tip and the bend plane of the respective tooth; and a ratio of SI/B is within the range of approximately 1/4 to approximately 3/4," as recited in claim 3 as amended. Accordingly, claim 3 is patentable over the cited combination of Nakahara and JP '716.

Claims 31 and 38 recite features similar to that of claim 3. Thus, for reasoning that is the same as or similar to that provided in support of the patentability of claim 3, claims 31 and 38 are patentable over the cited combination of Nakahara and JP '716.

Claims 23 and 24 depend from claim 3, claims 32 and 33 depend from claim 31, and claims 39 and 40 depend from claim 38. Thus, for reasoning that is the same as or similar to that provided in support of the patentability of claims 3, 31 and 38, claims 23, 24, 32, 33, 39 and 40 are patentable over the cited combination of Nakahara and JP '716. Applicants respectfully request reconsideration and withdrawal of the rejection of claims 23, 24, 32, 33, 39 and 40.

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Claims 48 and 49 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Nakahara in view of U.S. Patent No. 2,637,355 to Chapin, hereinafter "Chapin" Applicants respectfully traverse this rejection.

As discussed above, Nakahara does not teach or suggest a wood cutting band saw blade, wherein "at least a portion of the shelf is oriented at an angle of at least about 90° relative to a back edge portion of the blade in a cutting direction of the blade," as recited in claim 27 as amended.

Chapin describes hack saw blades having set teeth of a contour whereby that portion of each set tooth includes an edge of substantial lateral extent. However, Chapin does not describe a shelf defined by a set tooth. Thus, Nakahara and Chapin, whether considered alone or in combination, do not teach or suggest that "at least a portion of the shelf is oriented at an angle of at least about 90° relative to a back edge portion of the blade in a cutting direction of the blade," as recited in claim 27 as amended. Accordingly, claim 27 is patentable over the cited combination of Nakahara and Chapin.

Claims 48 and 49 depend from claim 27. Thus, for reasoning that is the same as or similar to that provided in support of the patentability of claim 27, claims 48 and 49 are patentable over the cited combination of Nakahara and Chapin. Applicants respectfully request reconsideration and withdrawal of the rejection of claims 48 and 49.

Conclusion

All issues raised by the Examiner having been addressed, an early allowance of the claims is earnestly solicited.

If the Examiner has any questions in connection with this paper, or otherwise if it would facilitate the examination of this application, he is respectfully requested to call the undersigned at the telephone number below.

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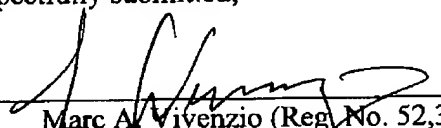
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In the event the Commissioner of Patents and Trademarks deems additional fees to be due in connection with this application, Applicants' attorneys hereby authorize that such fee(s) be charged to Deposit Account No. 50-3569.

Respectfully submitted,

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